REMARKS

The Office Action dated July 28, 2003, has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto. Applicants respectfully note that no new matter has been entered through the above amendments. Claims 1, 7 and 15 have been amended to more particularly point out and distinctly claim the subject matter of the invention. Claims 1-23 are pending in the above-cited application and are respectfully submitted for consideration.

The Office Action included a discussion of the information disclosure statement filed previously by the Applicants. The discussion indicated that clearly irrelevant and marginally pertinent, cumulative information should be eliminated and that particular references thought to be of most significance should be brought to the Examiner's attention. Applicants have reviewed the documents cited in the Information Disclosure Statement submitted September 6, 2001 and have not found any particular references that Applicants believe should emphasized or highlighted. Applicants wish to thank the Examiner for returning an initialed copy of the PTO-1449 submitted with the IDS.

Claims 1-10 and 15-19 were rejected under 35 U.S.C. § 102(e) as being anticipated by *Simmons et al.* (U.S. Patent No. 6,167,054). Claims 11-14 and 20-23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Simmons et al.* in view of *Karlson et al.* (U.S. Patent No. 6,535,942). The above rejections, as may be reasserted

against the claims as amended, are respectfully traversed according to the remarks that follow.

The present invention is directed to, according to claim 1, a method of flow control management of data packets is disclosed. The method includes the steps of determining each time data is being written to memory in order to calculate a memory used amount, determining each time data is being freed from memory in order to calculate a memory freed amount, calculating how much total memory is being used using the memory freed amount and the memory used amount and comparing the total memory being used to a first predetermined threshold, wherein when the first predetermined threshold is reached a first threshold command is issued indicating that the first predetermined threshold has been reached and wherein the memory is implemented as a linked list, with pointers pointing to next memory locations in the linked list.

The present invention is directed to, according to claim 11, a method of flow control management of data packets is disclosed. The method includes the steps of determining a memory address to which a start pointer is pointing, wherein the start pointer points to a next memory location in a linked list to be read from memory, determining a memory address to which an end of list pointer is pointing, wherein the end of list pointer points to a last memory location in the linked list, calculating from the start pointer and the end of list pointer a number of memory addresses which are being used by the linked list to determine a total amount of memory being used and comparing the total amount of memory being used to a first predetermined threshold, wherein when the

first predetermined threshold is reached a first threshold command is issued indicating that the first predetermined threshold has been reached.

The present invention is directed to, according to claim 15, a switch. The switch includes a bus, a memory interface connected to the bus and to a memory, a receive port connected to the bus, the receive port receiving data packets for transmission to the memory through the bus and the memory interface, a transmit port connected to the bus, the transmit port transmitting data packets from the memory through the transmit port out of the switch and a flow control manager connected to the bus. The flow control manager includes a bus monitor that determines when the data packets are being transmitted to the memory and when the data packets are being transmitted from the memory to the transmit port, a counter that is incremented each time data packets are transmitted to the memory and decremented each time data packets are transmitted from the memory to the transmit port, wherein the counter indicates a memory being used value and a first comparator that compares the counter to a first predetermined threshold, wherein when the counter meets the first predetermined threshold a first threshold command is transmitted across the bus. The memory is implemented as a linked list, with pointers pointing to next memory locations in the linked list.

The present invention is directed to, according to claim 20, a switch. The switch includes a bus, a memory interface connected to the bus and to a memory, a receive port connected to the bus, the receive port receiving data packets for transmission to the memory through the bus and the memory interface, a transmit port connected to the bus,

the transmit port transmitting data packets from the memory through the transmit port out of the switch and a flow control manager connected to the bus. The flow control manager includes a start pointer determiner that determines a memory address to which a start pointer is pointing to, wherein the start pointer points to the next memory location in a linked list to be read from memory, a end of list pointer determiner that determines a memory address to which an end of list pointer is pointing, wherein the end of list pointer points to the last memory location in the linked list, a memory used calculator that determines how many memory addresses are being used by the link list to determine a total amount of memory being used and a first comparator that compares the total amount of memory being used to a first predetermined threshold, wherein when the total amount of memory being used meets the first predetermined threshold a first threshold command is transmitted across the bus.

Simmons et al. is directed to a network having a shared memory architecture for storing data frames has a set of programmable thresholds that specify when flow control should be initiated on full-duplex network ports. Flow control is initiated based on the number of available frame pointers by transmitting a PAUSE frame having a selected PAUSE interval to a transmitting network station. Specifically, a full-duplex port will output a PAUSE frame having a short, medium, or long programmed pause interval if the free buffer pool of available frame pointers falls below a high, medium, or low programmable threshold, respectively. The switch generates variable-length PAUSE control frames to minimize wasting network bandwidth.

Karlson et al. is directed to a method for reducing interrupt load in a multi-processor system is disclosed, whereby two central processors executing a real-time operating system can communicate with each other using a shared memory. A start pointer and end pointer are implemented preferably in logic. By detecting a difference in the logic values for the two pointers, the receiving CPU will receive interrupts only when new data from the sending CPU has arrived in the shared memory and the shared memory was empty.

In the rejection of claims 11-14 and 20-23, the Office acknowledges that *Simmons et al.* fails to disclose the use of start and end pointers to point to a linked list in memory addresses to determine the amount of memory being used. Applicants note that claims 1 and 15 have been amended to more particularly point out the present invention and each claims recites, in part, that the "memory is implemented as a linked list, with pointers pointing to next memory locations in the linked list." Given this change, Applicants respectfully assert that an anticipation rejection of claims 1-10 and 15-19 over *Simmons et al.* would be improper, given the acknowledgement of the shortcomings of *Simmons et al.* in the Office Action.

Because of this shortcoming, the Office also cited *Karlson et al.* in the rejection of claims 11-14 and 20-23. However, claims 11 recites, in part, "wherein said start pointer points to a next memory location in a linked list to be read from memory" with claim 20 reciting similar subject matter. *Karlson et al.* does not, however, teach or suggest the use of a linked list formulation in a memory.

Rather, *Karlson et al.* is concerned with determining a difference in the logic values between the start and end pointers in order to reduce the number of interrupts, due to inter-CPU communication, that a CPU must process. While *Karlson et al.* does deal with shared memory, it does not teach or suggest a linked link formulation in a memory, where a pointer to a next memory location is written into a memory entry. As such, given the explicit recitation of a linked list and other elements of the independent claims, the combination of *Simmons et al.* and *Karlson et al.* cannot teach or suggest all of the elements of those independent claims. Reconsideration and withdrawal of the rejections applying *Simmons et al.* and *Karlson et al.* are respectfully requested.

Additionally, Applicants also respectfully assert that *Simmons et al.*, taken alone or somehow combined with any other reference, would not teach or suggest the claims of the present invention. Given the memory structure disclosed by *Simmons et al.*, shown, for example, in Fig. 4 of that reference, it is not clear that the implementation of linked lists in the memory buffers would allow for flow control that is disclosed therein. As such, Applicants respectfully assert that the claims of the present invention are also not rendered obvious by *Simmons et al.*, taken alone or in combination.

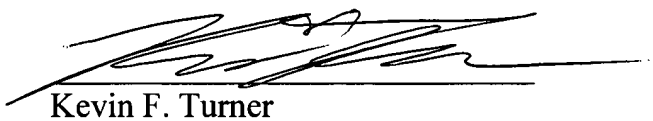
Thus, Applicants respectfully assert that any rejection of claims 1, 11, 15 and 20 over *Simmons et al.* and *Karlson et al.* would be improper for failing to teach or suggest all of the elements of those claims. On the basis of the above, independent claims 1, 11, 15 and 20 are respectfully asserted to be patentable, and as a consequence the dependent

claims 2-10, 12-14, 16-19 and 21-23 are patentable as well. It is therefore respectfully requested that claims 1-23 be allowed and this application be allowed to pass to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicant's undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



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